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History of Publications

Term	Vol.	Title	Published
Jan., 1929– Dec., 1947	1–16	化学研究所講演集 (The Reports of the Institute for Chemical Research)	Indeterminately
April, 1933	—	10 Jahre Institut für chemische Forschung (化学研究所創立十周年記念号)	—
March, 1949– Dec., 1949	17–19	化研講演集 (The Reports of the Institute for Chemical Research)	Indeterminately
March, 1950– Sept., 1952	20–30	化学研究所報告 (Bulletin of the Institute for Chemical Research)	Quarterly
Dec., 1951	—	The Commemoration Volume for the Silver Jubilee (化学研究所創立二十五周年記念号)	—
Jan., 1953 onwards	31 No. 1–	Bulletin of the Institute for Chemical Research (化学研究所報告)	Bi-monthly
Nov., 1966	44 No. 6	Special Issue on the Commemoration of the Fortieth Anniversary (化学研究所創立四十周年記念号)	—
Nov., 1976	54 No. 6	Special Issue on the Commemoration of the Fiftieth Anniversary (化学研究所創立五十周年記念号)	—

清　水　　栄　教　授

Professor Dr. Sakae Shimizu

Emeritus Professor Sakae Shimizu

On the first of April, 1979, Dr. Sakae Shimizu will retire after 36 years' service at Kyoto University. He will be granted the title of emeritus professor by the University on the following day.

Dr. Shimizu was born in Tokyo on July 18, 1915. He graduated from Kyoto University in March 1940, and became a graduate student, majoring in experimental nuclear physics under the supervision of Professor Bunsaku Arakatsu. In 1943 he was appointed as an instructor of physics in the Physics Department of the University. During the World War II he worked in the field of nuclear physics, particularly on photonuclear reactions of some nuclei by the irradiation of high energy gamma rays, construction of a cyclotron, and separation of ^{235}U by the ultra-high centrifugal method. Immediately after the atomic bomb was dropped in Hiroshima on August 6, 1945, he worked very hard from August 9 to 16 as a member of the special survey party from the University, headed by Professor B. Arakatsu. The party collected the first scientific evidence of the disaster caused by the nuclear explosion. In March 1946 he was promoted to an Assistant Professor. For several years since then his main research concern was on photonuclear reactions and development of various types of nuclear radiation detection instruments.

In July, 1952, he was appointed as Professor of Nuclear Physics at the Institute for Chemical Research of the University. His first project was to reconstruct the Kyoto Cyclotron, 105 cm fixed frequency —15 MeV deuteron acceleration—. This project took him nearly four years, completed with success in the spring of 1956. During this period he worked hard as the leader of a group of young workers who were studying many aspects of the radioactive fallout from the nuclear explosion test at Bikini Atoll on March 1, 1954. The results and pieces of information gained by this reserch project were compiled by him into a monograph entitled "The Radioactive Dust from the Nuclear Detonation," which was published by the Institute as a supplementary issue of the Institute Bulletin.

After the completion of the cyclotron he initiated the University's research reactor project. In order to gather valuable information on and knowledge of research reactors and experimental nuclear physics, he visited the United States, Canada, and Western European countries for seven months in 1956, with the support extended by the Fund for Peaceful Atomic Development, Inc., Detroit. For a few years thereafter he worked to promote the research reactor project and to render help to the newly-created department, Department of Nuclear Engineering, in the Faculty of Engineering.

In March 1957 he left from the cyclotron laboratory to become the supervisor of the Radioisotope Research Laboratory of the Institute. In June of the same year the Shimizu Laboratory was established and he was able to conduct research on his own. In the beginning, however, he did not have an easy time because he had to work in an old wooden building on the campus of the University Hospital with a few research members. In July 1960, a new building housing the Radioisotope Research Laboratory was built on the north campus of the University through his effort. In this building, he and his young colleagues and students could work in much improved conditions.

From July to September 1965, he was invited to the United States by the U. S.

State Department and U. S. AEC, and visited several national laboratories in the field of nuclear energy and leading universities. In the three months following this period he visited Canada and several European countries again to investigate the current state of experimental nuclear and particle physics in these countries. This second long trip around the globe —a half-year with many invaluable experiences— gave a great impetus to him in developing his research projects based on his own philosophy.

In order to respond to rapid development of research works using radioisotopes in the University, a new Radioisotope Research Center was established in April 1971. He was appointed as Director of this Center in addition to his position as the supervisor. A modern five-story building equipped with many facilities and instruments was completed two years later.

Since 1963 he has been concerned mainly with experimental as well as theoretical research on the higher-order nuclear phenomena involving shell electrons related to nuclear, atomic and solid state physics: 1) Special modes of positron annihilation by K-shell electrons, 2) change in decay constant of some radioactive nuclides by external effects —chemical bonding, high hydrostatic pressure, intense internal electric field in ferroelectric substances, extreme low temperature, and ultra-high centrifugal field, 3) internal ionization and excitation accompanying beta decay, K capture decay, and internal conversion, and 4) Mössbauer effect. Experimental evidences for occurrences of some phenomena in these fields have first been presented by his study. The results achieved in his Laboratory are highly regarded by both domestic and oversea academic circles.

For the past several years, about ten physicists from the United States and Europe came to work in his Laboratory as visiting professors or visiting scientists of the University. All of his young colleagues had opportunities to study at advanced research centers in Europe for more than one year. Dr. Shimizu himself has visited the United States and Europe several times.

Since 1950 he has served as a member or chairman of various committees in the University to promote research in the fields of nuclear energy and application of radioisotopes. He has also served as a member of the Board of Directors of the Japan Isotope Association since 1962. He is member of Physical Society of Japan, Atomic Energy Society of Japan, Japan Radiation Research Society, American Physical Society, American Nuclear Society, Health Physics Society, and Sigma Xi.

His sincere and warm personality with his enthusiasm for research is respected by his friends, colleagues, students, and all those who come in contact with him. The sence of warm atmosphere and international friendship which fills his Laboratory is well known at home and abroad.

This collection of papers contributed by his friends, colleagues, and students is dedicated to Dr. Shimizu in the honor at the time of his memorable retirement.

January, 1979

Megumi Tashiro

Megumi Tashiro
Director
Institute for Chemical Research
Kyoto University

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